

What is claimed is:

1. A method for performing spinal surgery, comprising:
accessing a disc space between adjacent vertebrae;
performing a discectomy in the interspace;
inserting an enlargeable portion of a distractor into the disc space;
enlarging the enlargeable portion of the distractor to distract the disc space to a desired disc space height, wherein the enlarged enlargeable portion is sized to form a void in the disc space between the annulus and an exterior surface of the enlarged enlargeable portion; and
placing a material into the void.
2. The method of claim 1, further comprising:
curing the material;
reducing the size of the enlargeable portion of the distractor after the material is cured; and
removing the reduced enlargeable portion of the distractor from the disc space.
3. The method of claim 2, further comprising:
placing a second material in the space previously occupied by the enlargeable portion.
4. The method of claim 3, wherein the cured material and the vertebral endplates substantially encapsulate the second material.
5. The method of claim 3, wherein the second material is bone growth material.
6. The method of claim 1, wherein the material is a cement.
7. The method of claim 1, wherein enlarging the enlargeable portion of the

distractor includes inflating the enlargeable portion of the distractor.

8. The method of claim 7, wherein the enlarged portion of the distractor is deflated to remove the enlargeable portion from the disc space.

9. The method of claim 1, further comprising:
removing cartilaginous material from the vertebral endplates before inserting the enlargeable portion of the distractor; and,
removing a portion of the inner wall of the annulus before inserting the enlargeable portion of the distractor.

10. The method of claim 1, further comprising selecting a distractor including an enlargeable portion having a predetermined vertebral endplate contact area.

11. The method of claim 1, further comprising inserting an enlargeable portion of a second distractor in the disc space with the enlargeable portion of the distractor.

12. The method of claim 11, further comprising enlarging the enlargeable portion of the second distractor, wherein an inner wall of an annulus encompassing the disc space, the enlarged enlargeable portion of the distractor and the enlarged enlargeable portion of the second distractor form the void.

13. The method of claim 12, further comprising:
curing the material;
reducing the size of the enlargeable portion of the distractor after the material is cured;
removing the reduced enlargeable portion of the distractor from the disc space;
and
placing material into the space previously occupied by the enlarged enlargeable portion of the distractor with the enlargeable portion of the second distractor remaining in

disc space.

14. The method of claim 13, further comprising:
curing the material placed in the space;
reducing the size of the enlargeable portion of the second distractor;
withdrawing the enlargeable portion of the second distractor from the disc space;
and
placing a second material in the space previously occupied by the enlargeable portion of the second distractor.

15. The method of claim 11, wherein the enlargeable portion of the distractor is positioned at a first lateral location in the disc space and the enlargeable portion of the second distractor is centrally positioned in the disc space.

16. The method of claim 11, wherein the enlargeable portion of the distractor is positioned at a first lateral location in the disc space and the enlargeable portion of the second distractor is positioned at a second lateral location in the disc space.

17. The method of claim 1, wherein accessing the disc space includes:
forming a first access port at a first postero-lateral location of the spine; and
forming a second access port at a second postero-lateral location of the spine.

18. The method of claim 1, wherein accessing the disc space includes
accessing the disc space from an uni-portal approach.

19. The method of claim 1, wherein accessing the disc space includes
accessing the disc space from a foraminal approach.

20. The method of claim 1, wherein the enlargeable portion of the distractor is
configured to establish lordosis of the disc space.

21. A method for performing spinal surgery in an interspace between adjacent vertebrae, comprising:

- providing a distractor having an inflatable distal end portion defining upper and lower vertebral endplate contact surfaces having a predetermined area;
- inserting the inflatable distal end portion of the distractor into the interspace;
- inflating the distal end portion of the distractor to distract the interspace to a desired interspace height, wherein a void is formed in the interspace between the annulus and the inflated portion; and
- placing material into the void.

22. A method for performing spinal surgery, comprising:

- accessing a disc space between adjacent vertebrae;
- performing a discectomy in the interspace;
- inserting an enlargeable portion of a distractor into the disc space;
- enlarging the enlargeable portion of the distractor to distract the disc space to a desired disc space height, wherein the enlarged enlargeable portion is sized to form a void in the disc space between the annulus and an exterior surface of the enlarged enlargeable portion;
- placing a material into the void;
- reducing the size of the enlargeable portion of the distractor after the material is placed; and
- removing the reduced enlargeable portion of the distractor from the disc space.

23. A method for performing spinal surgery in an interspace between adjacent vertebrae, comprising:

- providing a distractor having an inflatable distal end portion defining upper and lower vertebral endplate contact surfaces having a predetermined area;
- inserting the inflatable distal end portion of the distractor into the interspace;
- inflating the distal end portion of the distractor to distract the interspace to a desired interspace height, wherein a void is formed in the interspace between the annulus and the inflated portion;

placing material into the void.

reducing the size of the enlargeable portion of the distractor after the material is placed; and

removing the reduced enlargeable portion of the distractor from the disc space

24. A method for performing spinal surgery in the disc space between adjacent vertebrae, comprising:

providing a first distractor having an inflatable distal end portion defining upper and lower vertebral endplate contact surfaces;

accessing the disc space from at least one access port;

inserting the inflatable distal end portion of the first distractor into the disc space through the at least one access port;

inserting the inflatable distal end portion of the second distractor into the disc space through the at least one access port; and

inflating the first and second distal end portions to distract the disc space.

25. The method of claim 24, wherein a void is formed in the disc space between the inflated first and second inflatable distal end portions and the annulus; and further comprising placing material into the void.

26. The method of claim 24, wherein the inflatable distal end portion of the first distractor has a distraction height that differs from a distraction height of the inflatable distal end portion of the second distractor.

27. The method of claim 24, wherein:

the inflatable distal end portions of the first and second distractors each define a banana shape;

accessing the disc space includes accessing the disc space with opposite first and second postero-lateral access ports;

the first distractor is positionable through the first access port with its banana shaped distal end portion positioned along a first portion of the apophyseal ring of the

vertebral endplates; and

the second distractor is positionable through the second access port with its banana shaped distal end portion positioned along a second portion of the apophyseal ring of the vertebral endplates.

28. The method of claim 27, wherein the inflatable distal end portion of the first distractor has a distraction height that differs from a distraction height of the inflatable distal end portion of the second distractor.

29. The method of claim 24, wherein the at least one access port provides a postero-lateral approach to the disc space.

30. A method for performing spinal surgery, comprising:
preparing a spinal disc space for insertion of a form;
positioning the form in the spinal disc space wherein a void is formed around the form;
placing a first material in the void and in contact with the vertebral endplates on either side of the spinal disc space;
removing the form; and
placing a second material in the position that was occupied by the removed form.

31. The method of claim 30, wherein the first material has a fluid state while placing the first material and after placing the first material changes to a second condition after wherein the first material provides a solid interbody device extending between the vertebral endplates.

32. The method of claim 30, wherein the form is an enlargeable portion of a distractor.

33. The method of claim 30, wherein preparing the spinal disc space includes:
accessing the spinal disc space from a pair of opposite ports each inserted from a

postero-lateral approach; and

performing a discectomy through at least one of the ports.

34. A method for performing spinal surgery, comprising:
preparing a spinal disc space for placement of a first material therein;
forming a void in the spinal disc space;
placing a first material in the void and in contact with vertebral endplates on either side of the spinal disc space and in contact with an inner annulus wall;
forming a cavity in the first material; and
placing a second material in the cavity.

35. The method of claim 34, wherein forming the void includes:
inserting an enlargeable portion of a distractor into the disc space in a reduced-size configuration; and
enlarging the enlargeable portion of the distractor in the disc space.

36. The method of claim 35, wherein enlarging the distractor distracts the disc space to a desired disc space height.

37. A spinal surgical instrument for distracting a disc space, comprising:
a shaft extending between a proximal end and a distal end; and
an inflatable portion adjacent said distal end, said inflatable portion having a reduced size configuration for insertion into the disc space and an enlarged inflated configuration, wherein when in said inflated configuration said inflatable portion defines an upper vertebral endplate contacting surface and an opposite lower vertebral endplate contacting surface, each of said upper and lower vertebral endplate contacting surfaces having a vertebral endplate contacting area in the range of 0.1 square inches to 0.5 square inches.

38. The instrument of claim 37, wherein said shaft defines an inflation lumen in communication with said inflatable portion.

39. The instrument of claim 37, wherein each of said vertebral endplate contacting surfaces has an oval shape.

40. The instrument of claim 37, wherein each of said vertebral endplate contacting surfaces has a circular shape.

41. The instrument of claim 37, wherein each of said vertebral endplate contacting surfaces has a generally rectangular shape.

42. The instrument of claim 37, wherein each of said vertebral endplate contacting surfaces has a first contacting node and a second contacting node and said inflatable portion includes a concave surface extending between said first and second contacting nodes.

43. The instrument of claim 42, wherein when in said inflated configuration said inflatable portion is sized to contact vertebral endplates adjacent the disc space and restore the disc space to a desired disc space height, said inflatable portion is further sized and shaped in the anterior, posterior and lateral directions to occupy the disc space with a void formed between the inflatable portion and an inner wall of an annulus surrounding the disc space annulus.

44. A spinal surgical device implantable in a disc space, comprising:
a shaft extending between a proximal end and a distal end; and
an inflatable portion adjacent said distal end, said inflatable portion having a reduced size configuration for insertion into the disc space and an enlarged inflated configuration, wherein when in said inflated configuration said inflatable portion is sized to contact vertebral endplates adjacent the disc space and restore the disc space to a desired disc space height, said inflatable portion is further sized and shaped in the anterior, posterior and lateral directions to occupy the disc space with a void formed between the inflatable portion and an inner wall of an annulus surrounding the disc space

annulus; and

a first material in the void.

45. The device of claim 44, wherein said shape is selected from the group consisting of: a vertically-oriented cylinder, a horizontally-oriented cylinder, a sphere, a center cylinder with frusto-conically tapered ends, a banana, and a pear.

46. The device of claim 44, wherein when inflated said inflatable portion defines an upper vertebral endplate contacting surface and an opposite lower vertebral endplate contacting surface, each of said upper and lower vertebral endplate contacting surfaces having a vertebral endplate contacting area in the range of 0.1 square inches to 0.5 square inches.

47. The device of claim 44, wherein said shaft defines an inflation lumen in communication with said inflatable portion.